



# Sequence Listing

<110> Zhang, Jingwu Z.  
Ho, Walter Kowk Keung  
Zhang, Dongqing  
Sun, Wei

<120> T Cell Receptor CDR3 Sequence and Methods for Detecting  
and Treating Rheumatoid Arthritis

<130> 057186.000003

<140> US 10/612,468  
<141> 2003-07-02

<160> 168

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<220>  
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<223> part of the complementary determining region-3 (CDR3) in  
the V $\beta$ 14 family (BV14 gene) of T cell receptors (TCR)  
in patients with rheumatoid arthritis (RA)

<400> 1

agccaagctg acgggaccca t 21

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<223> part of the complementary determining region-3 (CDR3) in  
the V $\beta$ 16 family (BV16 gene) of TCR in patients with RA

<400> 2

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<210> 3  
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<213> *Homo sapiens*

<220>  
<221> Peptide

<223> conserved amino acid sequence derived  
from CDR3 of  
TCR beta-chain BV14 in patients with RA

<400> 3

Ser Gln Ala Asp Gly Thr His  
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<210> 4

<211> 7

<212> PRT

<213> *Homo sapiens*

<220>

<221> Peptide

<223> conserved amino acid sequence derived  
from CDR3 of  
TCR beta-chain BV16 in patients with RA

<400> 4

Ser Ser Gly Gly Ser Leu Phe  
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<210> 5

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<223> amino acid sequence motif derived  
from CDR3 of  
TCR beta-chain BV16 in patients with RA

<400> 5

Ser Trp Gly Gly

<210> 6

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<220>

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<223> amino acid sequence of human  $\beta$  chain variable region  
V $\beta$ 14 of T cell receptors

<400> 6

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				5					10					15
Ala	Gly	Pro	Leu	Glu	Ala	Gln	Val	Thr	Gln	Asn	Pro	Arg	Tyr	Leu
				20					25					30
Ile	Thr	Val	Thr	Gly	Lys	Lys	Leu	Thr	Val	Thr	Cys	Ser	Gln	Asn
				35					40					45
Met	Asn	His	Glu	Tyr	Met	Ser	Trp	Tyr	Arg	Gln	Asp	Pro	Gly	Leu
				50					55					60
Gly	Leu	Arg	Gln	Ile	Tyr	Tyr	Ser	Met	Asn	Val	Glu	Val	Thr	Asp
				65					70					75
Lys	Gly	Asp	Val	Pro	Glu	Gly	Tyr	Lys	Val	Ser	Arg	Lys	Glu	Lys
				80					85					90
Arg	Asn	Phe	Pro	Leu	Ile	Leu	Glu	Ser	Pro	Ser	Pro	Asn	Gln	Thr
				95					100					105
Ser	Leu	Tyr	Phe	Cys	Ala	Ser	Ser							
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 V $\beta$ 16 of T cell receptors

<400> 7

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Lys	Gly	Gln	Thr	Val	Thr	Leu	Arg	Cys	Asp	Pro	Ile	Ser	Gly	His
				20					25					30
Asp	Asn	Leu	Tyr	Trp	Tyr	Arg	Arg	Val	Met	Gly	Lys	Glu	Ile	Lys
				35					40					45
Phe	Leu	Leu	His	Phe	Val	Lys	Glu	Ser	Lys	Gln	Asp	Glu	Ser	Gly
				50					55					60
Met	Pro	Asn	Asn	Arg	Phe	Leu	Ala	Glu	Arg	Thr	Gly	Gly	Thr	Tyr
				65					70					75
Ser	Thr	Leu	Lys	Val	Gln	Pro	Ala	Glu	Leu	Glu	Asp	Ser	Gly	Val
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Tyr	Phe	Cys	Ala	Ser	Ser									
				95										

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 <400> 9  
  
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 <210> 10  
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 <210> 11  
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 <210> 12  
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 <212> DNA

<213> Artificial Sequence  
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 <210> 15  
 <211> 21  
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<210> 16  
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 <220>  
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cccccgctct gtgcgctgga t 21  
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 PCR analysis  
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 <210> 21  
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 tggctgcagg gcgtgtaggt g 21  
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 PCR analysis  
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 <220>  
 <221> primer\_bind  
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<400> 23  
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 PCR analysis  
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 PCR analysis  
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 <210> 27  
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<223> reverse primer specific for TCR BV10 used in real-time  
PCR analysis

<400> 27

ggactggatc tccaaggtac a 21

<210> 28

<211> 23

<212> DNA

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<223> forward primer specific for TCR BV11 used in real-time  
PCR analysis

<400> 28

ttatagggac aggaaagaag atc 23

<210> 29

<211> 21

<212> DNA

<213> Artificial Sequence

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<221> primer\_bind

<223> reverse primer specific for TCR BV11 used in real-time  
PCR analysis

<400> 29

atgtgagggc ctggcagact c 21

<210> 30

<211> 23

<212> DNA

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<223> forward primer specific for TCR BV12 used in real-time  
PCR analysis

<400> 30

caagacacaa gatcacagag aca 23

<210> 31

<211> 21

<212> DNA

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 <210> 32  
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 <210> 33  
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 <220>  
 <221> primer\_bind  
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 PCR analysis  
  
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 <210> 37  
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 <210> 38  
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<210> 39  
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<210> 44  
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<210> 45  
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<210> 46  
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<220>  
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 <210> 47  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <221> primer\_bind  
 <223> reverse primer specific for TCR BV20 used in real-time PCR analysis  
 <400> 47  
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 <210> 48  
 <211> 24  
 <212> DNA  
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 <221> primer\_bind  
 <223> forward primer specific for TCR BV21 used in real-time PCR analysis  
 <400> 48  
 cccagatata agattacaga gaaa 24  
 <210> 49  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
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 <223> reverse primer specific for TCR BV21 used in real-time PCR analysis  
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 ctggatcttg agagtggagt c 21  
 <210> 50  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <221> primer\_bind  
 <223> forward primer specific for TCR BV22 used in real-time

PCR analysis

<400> 50

cacagatggg acaggaagtg atc 23

<210> 51

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<221> primer\_bind

<223> reverse primer specific for TCR BV22 used in real-time  
PCR analysis

<400> 51

gtcctccagc tttgtggacc g 21

<210> 52

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<221> primer\_bind

<223> forward primer specific for TCR BV23 used in real-time  
PCR analysis

<400> 52

aagagggaaa cagccactct g 21

<210> 53

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<221> primer\_bind

<223> reverse primer specific for TCR BV23 used in real-time  
PCR analysis

<400> 53

cagctccaag gagctcatgt t 21

<210> 54

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<221> primer\_bind  
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 ccaagataacc aggttaccca gttt 24  
  
 <210> 55  
 <211> 21  
 <212> DNA  
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 <210> 56  
 <211> 22  
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 <213> Artificial Sequence  
  
 <220>  
 <221> primer\_bind  
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 <400> 56  
 aaaacatctt gtcagagggg aa 22  
  
 <210> 57  
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 <220>  
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 <210> 58  
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<220>  
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 <400> 61  
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 <210> 62  
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<213> Artificial Sequence  
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 <210> 66  
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<220>  
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 <210> 72  
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 <210> 73  
 <211> 21  
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<400> 74

tgaccgtgag cctgggtgccc g 21

<210> 75

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 75

Tyr Phe Cys Ala Ser Ser Gln Asp Ser Gly Gly Gly Gly Glu Gln  
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Phe Phe Gly Pro Gly  
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<210> 76

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 76

tatttctgtg ccagcagcca agatagcggg gggggagggtg agcagttctt cgggccagga 60

<210> 77

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 77

Tyr Phe Cys Ala Ser Ser Arg Leu Gly Gln Gly Tyr Asn Glu Gln  
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 Phe Phe Gly Pro Gly  
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<210> 78  
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived  
                                   from ST specimen of RA patients

<400> 78  
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<210> 79  
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<220>  
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 <223> CDR3 amino acid sequence of BV16 clonotype derived  
                                   from ST specimen of RA patient

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 Phe Phe Gly Pro Gly  
                                   20

<210> 80  
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                                   from ST specimen of RA patients

<400> 80

tattttctgtg ccagcagcca agatctggac agctacaatg agcagttctt cgggccagga 60

<210> 81  
<211> 20  
<212> PRT  
<213> *Homo sapiens*

<220>  
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<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 81

Tyr Phe Cys Ala Ser Ser Gln Gly Thr Ser Gly Ile Thr Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
20

<210> 82  
<211> 60  
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from ST specimen of RA patients

<400> 82

tattttctgtg ccagcagcca ggggactagc gggatcactg agcagttctt cgggccagga 60

<210> 83  
<211> 20  
<212> PRT  
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<220>  
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<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 83

Tyr Phe Cys Ala Ser Ser Gln Leu Ala Gly Pro Tyr Asn Glu Gln  
5 10 15

Phe Phe Gly Pro Gly  
20

<210> 84  
<211> 60  
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from ST specimen of RA patients

<400> 84

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<210> 85  
<211> 20  
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<220>  
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from ST specimen of RA patient

<400> 85

Tyr Phe Cys Ala Ser Ser Leu Leu Gly Thr Val Ser Tyr Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
20

<210> 86  
<211> 60  
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from ST specimen of RA patients

<400> 86

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<210> 87



<211> 20  
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 from ST specimen of RA patient

<400> 87  
 Tyr Phe Cys Ala Ser Pro Leu Gly Thr Ala Leu Ser Tyr Glu Gln  
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 Phe Phe Gly Pro Gly  
                                   20

<210> 88  
 <211> 60  
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived  
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<400> 88  
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<210> 89  
 <211> 20  
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 from ST specimen of RA patient

<400> 89  
 Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln  
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 Phe Phe Gly Pro Gly  
                                   20

<210> 90  
 <211> 60  
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<213> Artificial Sequence

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<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 90

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<210> 91

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 91

Tyr Phe Cys Ala Ser Ser Gln Asp Lys Gly His Phe Tyr Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
20

<210> 92

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

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from ST specimen of RA patients

<400> 92

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<210> 93

<211> 20

<212> PRT

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from ST specimen of RA patient

<400> 93

Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
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<210> 94

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived

from ST specimen of RA patients

<400> 94

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<210> 95

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived

from ST specimen of RA patient

<400> 95

Tyr Phe Cys Ala Ser Ser Trp Gly Gly Thr Asp Ile Tyr Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
20

<210> 96

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived

from ST specimen of RA patients

<400> 96

tattttctgtg ccagcagctg gggcgggaca gacatctacg agcagtactt cgggccgggc 60

<210> 97

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 97

Tyr	Phe	Cys	Ala	Ser	Ser	Leu	Leu	Gly	Thr	Val	Ser	Tyr	Glu	Gln
				5					10				15	
Phe	Phe	Gly	Pro	Gly										
				20										

<210> 98

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 98

tattttctgtg ccagcagcct tctcggcaca gtatcctacg agcagtactt cgggccgggc 60

<210> 99

<211> 18

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 99

Tyr	Phe	Cys	Ala	Ser	Ser	Gln	Gly	Leu	Asn	Thr	Glu	Ala	Phe	Phe
				5					10				15	

Gly Gln Gly

<210> 100  
<211> 54  
<212> DNA  
<213> Artificial Sequence

<220>  
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<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 100

tattttctgtg ccagcagcca aggccttaac actgaagctt tctttggaca aggc 54

<210> 101  
<211> 18  
<212> PRT  
<213> *Homo sapiens*

<220>  
<221> Domain  
<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 101

Tyr Phe Cys Ala Ser Arg Ala Ser Arg Tyr Thr Glu Ala Phe Phe  
5 10 15

Gly Gln Gly

<210> 102  
<211> 54  
<212> DNA  
<213> Artificial Sequence

<220>  
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from ST specimen of RA patients

<400> 102

tattttctgtg ccagcagggc aagcaggtac actgaagctt tctttggaca aggc 54

<210> 103  
<211> 18

<212> PRT  
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 <220>  
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 <223> CDR3 amino acid sequence of BV16 clonotype derived  
 from ST specimen of RA patient

<400> 103

Tyr Phe Cys Ala Ser Arg Ala Ser Arg Tyr Thr Glu Ala Phe Phe  
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 Gly Gln Gly

<210> 104  
 <211> 54  
 <212> DNA  
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<220>  
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived  
 from ST specimen of RA patients

<400> 104

tattttctgtg ccagcagggc aagcaggtac actgaagctt tcttttgaca aggc 54

<210> 105  
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 <212> PRT  
 <213> *Homo sapiens*

<220>  
 <221> Domain  
 <223> CDR3 amino acid sequence of BV16 clonotype derived  
 from ST specimen of RA patient

<400> 105

Tyr Phe Cys Ala Ser Ser Thr Gly Val Asn Thr Glu Ala Phe Phe  
                   5                  10                  15  
 Gly Gln Gly

<210> 106  
 <211> 54  
 <212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 106

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<210> 107

<211> 18

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 107

Tyr Phe Cys Ala Ser Ser Leu Thr Thr Asn Thr Glu Ala Phe Phe  
5 10 15  
Gly Gln Gly

<210> 108

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 108

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<210> 109

<211> 18

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 109

Tyr Phe Cys Ala Ser Ser Gln Asp Ser Tyr Thr Glu Ala Phe Phe  
5 10 15  
Gly Gln Gly

<210> 110

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived  
from ST specimen of RA patients

<400> 110

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<210> 111

<211> 18

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV16 clonotype derived  
from ST specimen of RA patient

<400> 111

Tyr Phe Cys Ala Ser Ser Trp Gly Gly Asn Thr Glu Ala Phe Phe  
5 10 15  
Gly Gln Gly

<210> 112

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV16 clonotype derived



from ST specimen of RA patients

<400> 112

tattttctgtg ccagcagctg ggggggcaac actgaagctt tctttggaca aggc 54

<210> 113

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 113

Tyr Phe Cys Ala Ser Ser Pro Thr Arg Asp Arg Gly Asn Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
20

<210> 114

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 114

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gga 63

<210> 115

<211> 22

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 115

Tyr Phe Cys Ala Ser Ser Ser Pro Ile Ala Gly Ser Ser Tyr Asn  
5 10 15  
Glu Gln Phe Phe Gly Pro Gly  
20

<210> 116

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 116

tactttctgtg ccagcagttc cccaatagcg gggagctcca atgagcagtt cttcgggcca 60  
gga 63

<210> 117

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 117

Tyr Phe Cys Ala Ser Ser Phe Trp Ala Pro Thr Asp Asn Glu Gln  
5 10 15  
Phe Phe Gly Pro Gly  
20

<210> 118

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 118

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gga 63

<210> 119

<211> 21

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 119

Tyr Phe Cys Ala Ser Ser Ser Ser Ser Pro Thr Ser Tyr Asn Glu  
5 10 15  
Gln Phe Phe Gly Pro Gly  
20

<210> 120

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 120

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<210> 121

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 121

Tyr Phe Cys Ala Ser Ser Pro Arg Glu Gly Leu Leu Asn Glu Gln  
                   5                  10                  15  
 Phe Phe Gly Pro Gly  
                   20

<210> 122  
 <211> 63  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived  
           from ST specimen of RA patients

<400> 122

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 gga 63

<210> 123  
 <211> 21  
 <212> PRT  
 <213> *Homo sapiens*

<220>  
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 <223> CDR3 amino acid sequence of BV14 clonotype derived  
           from ST specimen of RA patients

<400> 123

Tyr Phe Cys Ala Ser Ser Pro Trp Thr Ser Gly Ser Gly Asn Glu  
                   5                  10                  15  
 Gln Phe Phe Gly Pro Gly  
                   20

<210> 124  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived  
           from ST specimen of RA patients

<400> 124

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<210> 125

<211> 19

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 125

Tyr Phe Cys Ala Ser Ser Leu Arg Thr Arg Phe Tyr Glu Gln Tyr  
5 10 15  
Phe Gly Pro Gly

<210> 126

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 126

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<210> 127

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 127

Tyr Phe Cys Ala Ser Ser Leu Thr Ser Gly Arg Gln Tyr Glu Gln  
5 10 15

Tyr Phe Gly Pro Gly  
20

<210> 128  
<211> 60  
<212> DNA  
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from ST specimen of RA patients

<400> 128

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<210> 129  
<211> 20  
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from ST specimen of RA patients

<400> 129

Tyr Phe Cys Ala Ser Ser Ser Gly Gly Ser Leu Phe Tyr Glu Gln  
5 10 15

Tyr Phe Gly Pro Gly  
20

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from ST specimen of RA patients

<400> 130

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<210> 131  
<211> 20  
<212> PRT  
<213> *Homo sapiens*

<220>  
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 <223> CDR3 amino acid sequence of BV14 clonotype derived  
 from ST specimen of RA patients

<400> 131

Tyr Phe Cys Ala Ser Ser Leu Ser Val Gly Ala Thr Tyr Glu Gln  
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 Tyr Phe Gly Pro Gly  
                   20

<210> 132  
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<220>  
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 from ST specimen of RA patients

<400> 132

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<210> 133  
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<400> 133

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 Tyr Phe Gly Pro Gly  
                   20

<210> 134  
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 from ST specimen of RA patients

<400> 134

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<210> 135

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 135

Tyr Phe Cys Ala Ser Ser Pro Ser Ile Ser Ser His Tyr Glu Gln  
5 10 15

Tyr Phe Gly Pro Gly  
20

<210> 136

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 136

tactttctgtg ccagcagccc aagtattagt tcccactacg agcagttctt cgggccagga 60

<210> 137

<211> 19

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 137

Tyr Phe Cys Ala Ser Ser Arg Asp Gly Val Ser Tyr Glu Gln Tyr  
5 10 15

Phe Gly Pro Gly



<210> 138  
<211> 57  
<212> DNA  
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<220>  
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from ST specimen of RA patients

<400> 138

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<210> 139  
<211> 19  
<212> PRT  
<213> *Homo sapiens*

<220>  
<221> Domain  
<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 139

Tyr Phe Cys Ala Ser Ser Leu Ser Ser Thr Gly Arg Glu Gln Tyr  
5 10 15  
Phe Gly Pro Gly

<210> 140  
<211> 57  
<212> DNA  
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from ST specimen of RA patients

<400> 140

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<210> 141  
<211> 20  
<212> PRT  
<213> *Homo sapiens*

<220>  
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 <223> CDR3 amino acid sequence of BV14 clonotype derived  
 from ST specimen of RA patients

<400> 141

Tyr Phe Cys Ala Ser Ser Leu Ser Phe Arg Leu Asp Tyr Glu Gln  
                   5                                  10                                  15  
 Tyr Phe Gly Pro Gly  
                                   20

<210> 142  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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 from ST specimen of RA patients

<400> 142

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<210> 143  
 <211> 20  
 <212> PRT  
 <213> *Homo sapiens*

<220>  
 <221> Domain  
 <223> CDR3 amino acid sequence of BV14 clonotype derived  
 from ST specimen of RA patients

<400> 143

Tyr Phe Cys Ala Ser Ser Pro Ser Gly Gln Gly Ser Tyr Glu Gln  
                   5                                  10                                  15  
 Tyr Phe Gly Pro Gly  
                                   20

<210> 144  
 <211> 60  
 <212> DNA  
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<220>  
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from ST specimen of RA patients

<400> 144

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<210> 145

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 145

Tyr Phe Cys Ala Ser Ser Phe Gly Thr Val Leu Ser Tyr Glu Gln  
5 10 15  
Tyr Phe Gly Pro Gly  
20

<210> 146

<211> 60

<212> DNA

<213> Artificial Sequence

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 146

tactttctgtg ccagcagttt tgggacagtc ctctcctacg agcagttctt cgggccagga 60

<210> 147

<211> 20

<212> PRT

<213> *Homo sapiens*

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 147

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Tyr Phe Gly Pro Gly 5 10 15  
20

<210> 148  
<211> 61  
<212> DNA  
<213> Artificial Sequence

<220>  
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 148

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<210> 149  
<211> 20  
<212> PRT  
<213> *Homo sapiens*

<220>  
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 149

Tyr Phe Cys Ala Ser Ser Leu Ser Ala Arg Thr Thr Tyr Glu Gln  
5 10 15  
Tyr Phe Gly Pro Gly  
20

<210> 150  
<211> 60  
<212> DNA  
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<220>  
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<400> 150

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<210> 151  
<211> 19  
<212> PRT  
<213> *Homo sapiens*

<220>  
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<223> CDR3 amino acid sequence of BV14 clonotype derived  
from ST specimen of RA patients

<400> 151

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Leu Gly Ser Gly

<210> 152  
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<212> DNA  
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<220>  
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from ST specimen of RA patients

<400> 152

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from ST specimen of RA patients

<400> 153

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<400> 155

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<210> 156

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<400> 157

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<210> 158

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from ST specimen of RA patients

<400> 159

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<210> 160

<211> 53

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<210> 161

<211> 18

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<213> *Homo sapiens*

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from ST specimen of RA patients

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